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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,383	10/18/2001	Rajendra Kumar	D-386	7672

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EXAMINER	
KIM, KEVIN	
ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/982,383	KUMAR ET AL.	
	Examiner	Art Unit	
	Kevin Y Kim	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Claxton et al (US 6,813,320) in view of Apelewicz (US 5,909,435) and Kost et al (US 6,081,215).

Claims 1,6 and 7.

Claxton et al discloses a system for channelizing an IF wideband input signal (output of mixer 28), comprising;

a mixer (64) for demodulating the wideband IF input signal to a baseband signal,

a clock generator (40) for generating a sampling clock signal,

a sampler and A/D converter (62) for digitizing the baseband signal, and

a processor (22) for transforming the digitized signal into channelized digital output signals.

The claimed invention differs, first, from Claxton et al in that it downcoverts the IF wideband signal in quadrataure to generate a complex signal. However, quadrature demodulation of an IF signal is well known in the art when a transmitted signal is quadrature modulated as evidenced by Apelwicz (see Fig.2) and thus would have been obvious The claimed invention further differs from Claxton et al in that it uses a polyphase clock generator to provide sample clocks to a plurality of samplers in a phase-staggered manner. Kost et al teaches, for analog-to-digital converting a wideband signal, the use of a plurality of low-rate A/D converters, clocked by sampling clocks signals of staggered phases in place of a high-rate A/D converter that has drawbacks of a large power consumption and non-linearity. See Fig. 4, col. 1, lines 41-43, col. 2, lines 3-5, and col. 8, lines 19-31. A bank of filters for the digitized signals are well known in a channelizer as admitted by applicant in the specification at page 27, line 24 0 page 28, line 13 for respectively filtering the sampled digitized signals. Thus, it would have been obvious to one skilled in the art at the time the invention was made to further modify the channerlizer of Claxton et al such that a plurality of analog to digital converters, clocked in staggered phases, is used to solve problems associated with a singly high-rate A/D converter.

Claim 2.

Claxton et al discloses the processor is a fast Fourier transform processor. See col.11, lines 52-53.

Claims 3 and 4.

It is quite established that the plurality of filters in the polyphase filter band are either finite or infinite impulse response filters, as admitted by applicant. See the specification at page 27, line 24 0 page 28, line 13.

Claim 5.

Claxton et al discloses the wideband signal comprises a plurality of channel signal that are frequency division multiple access signals. See col. 3, lines 49-55.

The filters of have a bandwidth equal to one half of a bandwidth of a respective channel signal. See the specification at page 27, line 24 0 page 28, line 13.

Claim 8.

Claxton et al discloses the processor is a fast Fourier transform processor. See col.11, lines 52-53. It would have been obvious to implement the gain and phase offset filters described by Kost et al with well known finite/infinite impulse response filters.

Claim 9.

Claxton et al discloses the wideband signal comprises a plurality of channel signal that are frequency division multiple access signals. See col. 3, lines 49-55.

The filters of have a bandwidth equal to one half of a bandwidth of a respective channel signal. See the specification at page 27, line 24 0 page 28, line 13.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sonalkar et al (US 6,356,569) teaches a polyphase filter in a digital channelizer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kevin Kim/

PATENT EXAMINER